

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: DRAGOI et al.

Examiner: Demakis, James

Application No.: 10/627,903

Group Art Unit: 2834

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For: SYSTEM AND METHOD FOR SPEED CONTROL AND STALL PROTECTION
COMBINATION FOR ELECTRIC MOTORS SUCH AS IN ENGINE COOLING
APPLICATIONS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Official Action dated April 19, 2006, please amend the above-identified application as follows:

Amendments to claims begin on page 2.

Remarks being on page 6.

IN THE CLAIMS:

1. (Currently Amended) A speed control and stall protection system for an electric DC brush motor, the system comprising:
 - a DC brush motor,
 - at least one relay connected between the motor and a power supply,
 - a speed sensing circuit constructed and arranged to generate a signal indicative of a speed of the motor, and
 - a motor control and protection circuit constructed and arranged to receive
 - 1) the signal from the speed sensing circuit and 2) a control signal input for operating the at least one relay to control operation of the motor,

wherein, when a stall condition is determined based on the signal from the speed sensing circuit, the motor control and protection circuit is constructed and arranged to control the at least one relay to disconnect power to the motor, and wherein the motor is a dual speed motor and a first relay is provided together with a series resistor for operating the motor at a low speed and a second relay is provided for operating the motor at a speed greater than the low speed, the motor control and protection circuit being constructed and arranged to receive the control signal input in the form of a speed control signal to selectively activate the first and second relays to control speed of the motor, and to inactivate the first and second relays to disconnect power to the motor.
2. Canceled
3. Canceled
4. (Currently Amended) The system of claim 1, wherein the motor, the first and second relays ~~at least one relay~~, the speed sensing circuit and the motor control and protection circuit are part of a single module.

5. (Original) The system of claim 1, wherein the motor is a permanent magnet motor.
6. (Currently Amended) A speed control and stall protection system for an electric DC brush motor, the system comprising:
 - a DC brush motor,
 - at least one relay connected between the motor and a power supply,
 - means for generating a signal indicative of a speed of the motor, and
 - means for controlling speed and protecting the motor constructed and arranged to receive 1) the signal from the speed sensing circuit and 2) a control signal input for operating the at least one relay to control operation of the motor,
 - wherein, when a stall condition is determined based on the signal from the means for generating a signal indicative of a speed of the motor, the means for controlling speed and protecting the motor controls the at least one relay to disconnect power to the motor, and
 - wherein the motor is a dual speed motor and a first relay is provided together with a series resistor for operating the motor at a low speed and a second relay is provided for operating the motor at a speed greater than the low speed, the means for controlling speed and protecting the motor being constructed and arranged to receive the control signal input in the form of a speed control signal to selectively activate the first and second relays to control speed of the motor and to inactivate the first and second relays to disconnect power to the motor.
7. Canceled
8. Canceled
9. (Currently Amended) The system of claim 6, wherein the motor, the first and second relays ~~at least one relay~~, the means for generating a signal and the means for controlling speed and protecting the motor are part of a single module.

10. (Currently Amended) A method of controlling speed and protecting during a stall condition, the method including the steps of:
- providing a permanent magnet DC brush motor,
 - providing at least one relay connected between the motor and a power supply,
 - controlling the at least one relay to operate the motor,
 - determining a speed of the motor, and
 - comparing the determined speed of motor with a threshold value and if the determined speed is below the threshold value, controlling the at least one relay to disconnect power to the motor,
- wherein the motor is a dual speed motor and a first relay is provided together with a series resistor for operating the motor at a low speed and a second relay is provided for operating the motor at a speed greater than the low speed, the step of controlling the at least one relay to operate the motor includes selectively activating the first and second relays to control the speed of the motor, and the step of controlling the at least one relay to disconnect power to the motor includes inactivating both the first and second relays.
11. Canceled
12. Canceled
13. (Currently Amended) The method of claim 10-12, wherein to operate the motor at a low speed, the first relay is activated and the second relay is inactivated and to operate the motor at a speed greater than the low speed, the first relay is inactivated and the second relay is activated.
14. (Currently Amended) The method of claim 10-12, wherein the step of controlling the at least one relay to control the motor includes operating the motor at the low

speed for a certain period of time and then operating the motor at a speed greater than the low speed so as to allow lower inrush of motor currents.

REMARKS

Reconsideration and allowance are respectfully requested. Claims 1, 4, 6, 9, 10, 13 and 14 have been amended. Claims 2, 3, 11 and 12 have been canceled. Claims 1, 4-10, 13 and 14 are pending.

Claims 1-14 stand rejected under 35 U.S.C. 102(b) as being anticipated by Makaran. This rejection is respectfully traversed.

Claim 1 has been amended to include the subject matter of claim 3, claim 6 has been amended to include the subject matter of claim 8, and claim 10 has been amended to include the subject matter of claim 12. In particular, each of the independent claims recites that:

the motor is a dual speed motor and a first relay is provided together with a series resistor for operating the motor at a low speed and second relay is provided for operating the motor at a speed greater than the low speed

Makaran does not teach or suggest that a series resistor for operating the motor at a low speed. In addition, Makaran does not teach or suggest first and second relays as claimed.

Furthermore, claim 1 recites that the motor control and protection circuit is constructed and arranged ... to selectively activate the first and second relays to control speed of the motor, and to inactivate the first and second relays to disconnect power to the motor. Claim 6 recites that the means for controlling speed and protecting the motor is constructed and arranged ... to selectively activate the first and second relays to control speed of the motor and to inactivate the first and second relays to disconnect power to the motor. Claim 10 recites that the step of controlling the at least one relay to operate the motor includes selectively activating the first and second relays to control the speed of the motor, and the step of controlling the at least one relay to disconnect power to the motor includes inactivating both the first and second relays.

Applicants submit that Makaran does not teach selectively activating first and second relays to control speed of the motor and inactivating the first and second relays

to disconnect power to the motors. In fact, FIG. 5 of Makaran shows only one relay RL1 for interrupting power to motor 20a. At column 6, lines 1-2 Makaran discloses, "Switching circuit 40a includes transistors Q1 and Q2 and a relay RL1, which controls the supply of power to motor 20a..."

With regard to claim 13, since Makaran does not teach two relays, Makaran does not teach activating and inactivating two relays as claimed.

With regard to claim 14, Makaran does not teach or suggest operating the motor to allow lower inrush of motor currents as claimed.

Hence, the rejection should be withdrawn because it fails to demonstrate that the applied reference discloses each and every element of the claim. See MPEP 2131. "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). "Anticipation cannot be predicated on teachings in the reference which are vague or based on conjecture." *Studiengesellschaft Kohle mbH v. Dart Industries, Inc.*, 549 F. Supp. 716, 216 USPQ 381 (D. Del. 1982), *aff'd.*, 726 F.2d 724, 220 USPQ 841 (Fed. Cir. 1984).

All objections and rejections having been addressed, it is respectfully submitted that this application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

 July 12, 2006

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